UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/522,392 | 10/31/2005 | Kikuo Matsuoka | 892_039 | 6313 |

25191 7590 12/11/2009

BURR & BROWN
PO BOX 7068
SYRACUSE, NY 13261-7068

| EXAMINER | |
|---|---|
| JACOBSON, MICHELE LYNN | |
| ART UNIT | PAPER NUMBER |
| 1794 | |
| MAIL DATE | DELIVERY MODE |
| 12/11/2009 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/522,392 | MATSUOKA ET AL. | |
| | Examiner | Art Unit | |
| | MICHELE JACOBSON | 1794 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *11 August 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *4-12 and 27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4-12 and 27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/6/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. Claim 4 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 4 has been amended to recite the limitation "wherein the push cutter is held at ambient temperature". There is no written support for this limitation in the specification as filed. Applicant has asserted on page 5 of the remarks submitted 8/11/09 that the previously recited term “normal temperature” is understood by those of ordinary skill in the art to be “ambient room temperature” but has failed to provide any evidence to support the assertion that these two terms are synonyms. Additionally, the examiner notes that claim 4 does not actually recite the term “ambient *room* temperature” There is no specific recitation in the specification defining the term “normal temperature” to be synonymous with “ambient room temperature” and therefore this recitation is interpreted to lack adequate written description.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention. Claim 4 recites the limitation that the "push cutter is held at ambient temperature". It is unclear from this recitation or applicant's specification what temperature is interpreted to meet the limitation ambient temperature since applicant has not provided any description of where this ambient temperature it to be measured. The word ambient is described in Merriam-Webster dictionary to mean "an encompassing atmosphere". Therefore, in order for the ambient temperature to be determined, it is necessary to know what the atmosphere is encompassing. The temperature of the atmosphere encompassing the push cutter that it in contact with heated polymeric material will be higher than the temperature of the atmosphere encompassing the whole room. Since it is unclear where the ambient temperature is intended to be measured, the recitation of ambient temperature will be interpreted to be the same temperature as the push cutter, since the atmosphere surrounding the push cutter would be expected to be the same temperature as the push cutter. Appropriate clarification is required.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 4-7, 10-12 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated Nagata et al. U.S. Patent No. 6,066,226 (hereafter referred to as by Nagata).

6. Nagata teaches a method for manufacturing a sheet-shaped oxygen absorber comprising: the step of laminating an air-permeable covering member, which comprises a first heat-sealable resin layer at least on one surface, over one surface of an oxygen-absorbing resin sheet in which an oxygen-absorbing composition is dispersed in a thermoplastic resin in a manner such that the first heat-sealable resin layer directly contacts the oxygen-absorbing resin sheet; the step of laminating an air-permeable or air-permeation-resistant covering member, which comprises a second heat-sealable resin layer at least on one surface, over the other surface of the oxygen-absorbing resin sheet in a manner such that the second heat-sealable resin layer directly contacts the oxygen-absorbing resin sheet; and the step of cutting a multi-layer structural body into a desirable shape by an ultrasonic heat sealing and cutting method, the multi-layer structural body consisting of the air-permeable covering member, the oxygen-absorbing resin sheet, and the air-permeation-resistant covering member. (Col. 3, lines 12-31)

7. Since the sheet-shaped oxygen absorber of the Nagata is cut into a desirable shape by the ultrasonic heat sealing and cutting method, the first and second heat-sealable resin layers are fused and sealed by heat at the cut portions, and the cut surfaces, that is, the periphery of the oxygen-absorbing resin sheet is covered. Therefore, not only the top and bottom surfaces of the oxygen-absorbing resin sheet, but also its periphery is not substantially exposed. Lack of substantial exposure of the

periphery of the oxygen-absorbing resin sheet results in an oxygen absorber in which even if the periphery of the oxygen-absorbing resin sheet is not completely covered and a very small amount of residue of the oxygen-absorbing resin sheet remains, there are no problems in practical use such as leakage of the oxygen-absorbing composition from the periphery or mixing of the oxygen-absorbing composition to the preserved substance due to contact with the oxygen-absorbing resin sheet. (Col. 3, lines 32-49)

8. Exposure of the periphery of the oxygen-absorbing resin sheet is substantially eliminated by utilizing the ultrasonic heat sealing and cutting method because of the following reasons: When the ultrasonic heat sealing and cutting method is performed, firstly the oxygen-absorbing resin sheet within the multi-layer structural body is heated, the thermoplastic resin then softens and simultaneously a cutting blade is pressed to the multi-layer structural body from outside, thereby the softened resin is moved away from the portions on which pressure is applied. Accordingly, at these pressure-applied portions, the first and second heat-sealable resin layers are fused and sealed by heat. Then the heat-sealed portions are cut by the cutting blade with pressure. As a result of the heat sealing of the first and second heat-sealable resin layers at the periphery (heat sealed portions) of the oxygen-absorbing resin sheet, the periphery of the oxygen-absorbing resin sheet is covered with the heat-sealable resin, in other words, the periphery of the oxygen-absorbing resin sheet becomes such that it has no substantial exposure. (Col. 3, line 50- Col. 4, line 2)

9. In the sheet-shaped oxygen absorber of Nagata, it is desirable that the thermoplastic resin softens faster than both the heat-sealable resin layers. It is also

desirable that the softening points of the heat-sealable resin layers are higher than the softening point of the thermoplastic resin. By using heat-sealable resin having such characteristics, exposure of the periphery of the oxygen-absorbing resin sheet can be prevented with more certainty. (Col. 4, lines 3-10)

10. Iron powder and iron chloride are recited to be useful oxygen absorbers. (Col. 4, lines 30-31) If the covering member comprising the second heat-sealable resin layer is resistant to air permeation, a gas-permeation-resistant plastic film which is made from heat-sealable resin is used, which may consist of either a single layer or multiple layers. This gas-permeation-resistant covering member may be a gas-permeation-resistant film formed by coating thermoplastic resin over the oxygen-absorbing resin sheet or may be a gas-permeation-resistant film which is adhered by a hot melt adhesive layer. (Col. 5, lines 20-29) Example 1 recites a laminate which corresponds to figure 1 comprising the following layers: air-permeable covering member (**2**), consisting of the first heat-sealable resin layer (**6**) and a porous film (**4**), an oxygen-absorbing resin sheet (**1**) an

FIG.1

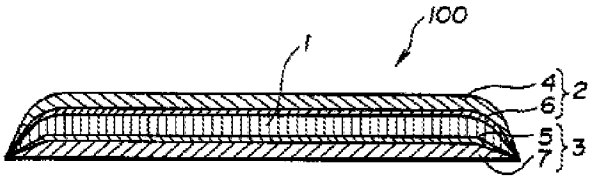
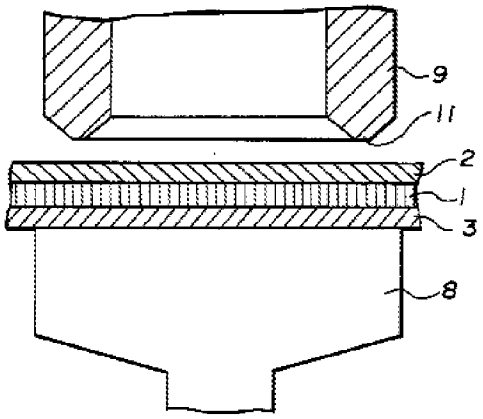



FIG.2



air-permeation-resistant covering member (**3**), consisting of the second heat-sealable resin layer (**5**) and an air-permeation-resistant film (**7**). (Col. 7, lines 23-35) The second heat sealable resin layer (**5**) is recited to be ethylene-vinyl acetate copolymer in this example. (Col. 8, lines 6-8)

11. As shown in Fig. 2 the ultrasonic heat sealing and cutting device is constructed in a manner such that it comprises: an ultrasonic vibration horn (**8**) on which the multi-layer structural body is set, and which generates an ultrasonic wave from below the multi-structural body in an upward direction; and a jig (**9**) which is placed opposite to and above the ultrasonic vibration horn (**8**) and which is movable up and down. The jig (**9**) has a hollow cylindrical shape, and the tip portion of the jig (**9**) opposite the ultrasonic vibration horn (**8**) is formed in a blade shape (**11**) (blade angle: 120 degrees). This ultrasonic heat sealing and cutting device is designed to hold the sheet-shaped oxygen absorber, which is placed on the ultrasonic vibration horn (**8**), between the ultrasonic vibration horn (**8**) and the jig (**9**), thereby allowing the heat sealing and cutting of the multi-layer structural body. (Col. 8, lines 26-47)

12. Second heat sealable layer (**5**) is recited by Nagata to be comprised of ethylene-vinyl acetate copolymer which is the same as the ethylene vinyl acetate copolymer “gas shut-off layer” material recited in applicant’s specification in paragraph [0072] of the pre-grant application publication. Therefore, the intermediate second heat sealable layer comprising ethylene-vinyl acetate copolymer is interpreted to meet the limitation in claims 10 and 12 of an intermediate “gas shut-off layer”.

13. Nagata anticipates the method of cutting a multilayer structure comprising intermediate iron chloride oxygen absorbing and permeation resistant (gas shut-off) resin layers comprising the steps of push cutting the resin layers while they are heated such that the top resin layer bites into the bottom resin layer supported by a cutter receiving portion recited in claims 27, 4, 7 and 10-12.

14. Regarding claim 27: Although Nagata does not explicitly state that the laminate is cooled prior to the push cutting step, the examiner interprets the recitation in Col. 4, lines 4-8 of Nagata that the thermoplastic resin softens faster than both the heat-sealable resin layers to mean that thermoplastic resin has a lower melting point than the heat-sealable resin layers. The cutting method described by Nagata takes place in two steps. First, the thermoplastic resin is heated to soften it while simultaneously the cutting blade is pressed into the multilayer structure comprising the heat sealable layers and the thermoplastic resin layer which moves the thermoplastic resin away from the portions where pressure is applied and heat seals the heat sealable resin layers together. Second, the heat sealable resin portions are cut by the cutting blade with pressure. Therefore, the method of Nagata comprises the steps of "in a fused state above a melting point temperature of at least one of the resin layers (Nagata=thermoplastic resin layer) forming the multilayer structure as recited in claim 1. Nagata also comprises the step of “then cooling and hardening the resin material constituting the multilayer structure below a melting point thereof" since the heat sealable resin materials were never heated above their melting points. This recitation does not require that the laminate be cooled below the melting point of the "at least one

of the resin layers" and instead only requires that the multilayer laminate be cooled to a temperature below the melting point of the multilayer laminate, which the examiner interprets to comprise the melting point of the heat sealable layers. Finally, Nagata clearly recites push cutting of the multilayer structure. Therefore, the invention of Nagata reads on the limitations of claim 27.

15. Regarding claim 4: The push cutter is necessarily held at its own ambient temperature as enumerated above.

16. Regarding claims 5 and 6: Nagata recites that the cutter portion is cylindrical with a blade angle of 120° which meets applicant's limitation that the push cutter have an angled edge and be belt-shaped with both ends connected together endlessly as claimed in claims 5 and 6.

17. Regarding claims 7 and 10-12: Nagata clearly recites a multilayer structure comprising intermediate iron chloride oxygen absorbing and permeation resistant (gas shut-off) resin layers.

### *Claim Rejections - 35 USC § 103*

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

19. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagata et al. U.S. Patent No. 6,066,226 (hereafter referred to as by Nagata).

20. Nagata teaches what has been recited above but is silent regarding using the method disclosed for forming cups or trays or pouches.

21. Nagata additionally discloses that it is well known in the art to fabricate oxygen absorbers in the form of small bag shaped oxygen absorbers. (Col. 1, lines 21-24) The sheet-shaped oxygen absorbers recited by Nagata are also disclosed to be produced freely in various shapes. (Col. 10, lines 41-43)

22. Since Nagata discloses it was known to fabricate bag (i.e. pouch) shaped oxygen absorbers and since the method of cutting the laminate recited is disclosed to be useful for various shapes it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the method and laminate disclosed to fabricate a small bag shaped (i.e. pouch) oxygen absorber. This would have been the same as the invention claimed in claim 9.

23. It is well known in the packaging and polymer arts to produce containers from laminates. One of ordinary skill who desired a container with oxygen absorbing capabilities would have been motivated to utilize the method and laminate disclosed by Nagata to mold a container because of the oxygen absorbing capabilities of the laminate and to harness the benefit of preventing the oxygen absorbing iron compound from contaminating anything contained in the container provided by the method of Nagata since the oxygen absorbing layer is specifically recited to be sealed in by the press cutting method. The obvious use of the method recited by Nagata to press cut a container from the laminate recited would have produced the invention claimed in claim 8.

### *Response to Arguments*

24. Applicant's arguments filed 8/11/09 have been fully considered but they are not persuasive.

25. Applicant's arguments on pages 5 and 6 of the remarks regarding the asserted absence of a cooling step in Nagata have been addressed in the rejection above.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHELE JACOBSON whose telephone number is

(571)272-8905. The examiner can normally be reached on Monday-Thursday 8:30 AM-7 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571)272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michele L. Jacobson
Examiner /M. J./
Art Unit 1794

/Rena L. Dye/
Supervisory Patent Examiner, Art Unit 1794